

REMARKS/ARGUMENTS

Claims 2-7, and 9-13 are in the application.

Applicant acknowledges the Examiner's consideration of claims 4-6 and 8 as being allowable if placed into independent form. Allowable claim 4 has been made independent. Allowable claim 8 has been replaced with new independent claim 10. With such amendments, claims 4 and claims 5, 6 and 7 dependent thereon, as well as new claim 10 and new claims 11, 12 and 13 (with limitations corresponding to original claims 2, 3 and 7) dependent thereon, are allowable. Claims 1 and 8 have been canceled.

With cancellation of claim 1, original claim 7 has been replaced with new independent claim 9. Original claims 2 and 3 have been made dependent on new claim 9.

In the Office Action, original claims 1-3 and 7 were rejected under 35 USC 103(a) as being unpatentable over Hardy in view of Plumley. Claim 1 was directed to a flexible pipe having a helically wound PTFE layer, with claim 7 requiring that such layer has a thickness between 0.5 and 5mm. Newly submitted independent claim 9, which replaces claims 1 and 7 requires that the flexible pipe has a helically wound PTFE layer **and** that the thickness of the PTFE layer is between 0.5 and 5 mm. Discussion of the Hardy and Plumley references, and the rejection based thereon, is accordingly with respect to new claim 9.

Hardy was cited as disclosing a flexible pipe having one sheath comprised of PTFE with a thickness of 0.5 to 3mm but not of the PTFE layer being comprised of a helically wound tape. Plumley was accordingly cited by the Examiner as disclosing a PTFE wrap. The Examiner considered it obvious to modify the sheath of Hardy in view of the teachings of Plumley, to provide a wrap of Plumley in the Hardy pipe.

In response thereto, and with respect to claim 9 which contains the limitation of a PTFE tape which is helically wound and that "...the PTFE tape has a thickness of between 0.5 mm and 5 mm...", the cited Hardy reference cannot be properly combined with the Plumley reference to provide both a helically wound teflon tape **and** that the tape is of a thickness dimensions between 0.5 and 5.0 mm. It is axiomatic that a proposed simple substitution of elements would not be effected by one skilled in the art without change in parameters required by the substituted element. Specifically, substitution of Plumley's PTFE tape for the PTFE tube of Hardy would also include dimensions of the Plumley PTFE which are specifically set forth and described as

being important for the utility of the tape. Plumley specifically notes with respect to the PTFE tape that:

“...Backing the inner layer 12 is a Teflon wrap 14 having an approximate thickness of **0.02 to 0.05 mm**... Due to the thickness of the Teflon layer 14, flexibility and bending properties of the hose construction are not sacrificed...” (col. 3, lines 19-26).

Plumley thus specifies that because of the thickness of 0.02 to 0.05 mm flexibility and bending properties of the hose made with the PTFE wrap are not detrimentally affected with the clear teaching that thicker tapes are not to be used. Accordingly, a combination of Hardy and Plumley, as suggested by the Examiner, would result, at most, in one skilled in the art using a PTFE tape of between 0.02 to 0.05 mm thickness, which is less than 1/10th the thickness of the PTFE tape claimed herein, in a helically wound structure. Surprisingly, as set forth in the present specification (pages 6-page 7), relatively thick PTFE tapes of the claimed thickness can be effectively used in helically wound structure. Prior art use of PTFE was only in the form of tubular sheaths (Hardy) or in the formation of very thin tapes (Plumley).

In addition to the above, Plumley requires that the PTFE tape be supported on an inner layer and is not by itself capable of being self supporting. This is in contrast to the Hardy reference which discloses a “sheath” of PTFE having a thickness of 0.5 to 3mm in the form of a continuous tubular extruded layer and not a helically wound tape, with Hardy describing the PTFE as being, “...a preferably **continuous tubular layer extruded into place** and preferably having a small thickness, in the order of 0.5 mm to 3 mm. The polymer used is an amorphous thermoplastics fluoropolymer...”.

Hardy's PTFE layer is accordingly an extruded in place tube not being subject to operational movements such as winding and exemplifies the prior art disclosed at page 6 of the present application. One skilled in the art would not substitute Plumley's tape and supporting layer for that of Hardy's self supporting structure. Furthermore, even if the substitution would be viable, a proper combination of Hardy's tubular layer and Plumley's wrap, substitution of the latter for the former must include the dimensional thickness of 0.02 to 0.05 mm of Plumley's PTFE wrap for it to be substituted for the less flexible tubular layer of Hardy. Claim 9 is accordingly patentable over the cited Hardy and Plumley references, even in the combination suggested by the Examiner.

Claims 2, and 3, in addition to the arguments made with respect to claim 9, specify the

particular preferred modified forms of PTFE which are suitable for tapes of the claimed thickness dimensions in helical winding structures, despite the clear teaching of the Plumley reference that tapes thicker than 0.05 mm are not flexible and suitable for wraps. Flexible pipes having helical winding of tapes of modified forms of PTFE as in claims 2 and 3 with dimensional thicknesses of 0.5 to 5.0 mm are thus not taught or even suggested by the cited Hardy and Plumley references.

It is submitted that in view of the above amendment and discussion all of the claims are allowable over the cited prior art and such favorable action is respectfully requested.

Respectfully submitted,

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Robert C. Faber
Registration No.: 24,322
OSTROLENK, FABER, GERB & SOFFEN, LLP
1180 Avenue of the Americas
New York, New York 10036-8403
Telephone: (212) 382-0700